



Total knee replacement

Patient education manual



Making healthcare remarkable

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Novant Health orthopedic teams have an extraordinarily high success rate for joint replacement. For you, this will soon mean renewed mobility and freedom from pain.

Table of contents

1. General information	4-7	3. Hospital care	13-14
<ul style="list-style-type: none"> ▪ Introduction ▪ Frequently asked questions ▪ Your healthcare team 		Day of surgery <ul style="list-style-type: none"> ▪ Activity ▪ Breathing ▪ Circulation ▪ Discomfort ▪ Food/fluids ▪ Going to the bathroom ▪ Wound care Day after surgery to discharge	
2. Before-surgery checklist		4. Caring for yourself at home	15-16
6-8 weeks before surgery 8-9 <ul style="list-style-type: none"> ▪ Advance healthcare directive ▪ Assistance ▪ Dental exam ▪ Diet ▪ Equipment ▪ Exercises ▪ Medical appointment ▪ Smoking ▪ Work 		<ul style="list-style-type: none"> ▪ Anticoagulant medication ▪ Changes after surgery ▪ Coping with stress ▪ Discomfort ▪ Equipment ▪ Incision care and dressing changes ▪ Handicap parking sticker 	
10-14 days before surgery 10-11 <ul style="list-style-type: none"> ▪ Place of worship ▪ Home changes ▪ Mail ▪ Medications ▪ Preoperative class 		5. Preventing/recognizing potential complications	17
Several days before surgery 11 <ul style="list-style-type: none"> ▪ Bills ▪ Clean ▪ Groceries and supplies ▪ Infection ▪ Transportation 		<ul style="list-style-type: none"> ▪ Blood clots ▪ Infections ▪ Other reasons to contact your surgeon ▪ Weight loss 	
1 day/night before surgery 12-13 <ul style="list-style-type: none"> ▪ What to pack ▪ What not to do ▪ Showering 		6. Post-op exercises, goals and activity guidelines	18-24
		<ul style="list-style-type: none"> ▪ Activity goals ▪ Leg exercises 	

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7. Activities of daily living	25-27
<ul style="list-style-type: none"> ▪ Safety and avoiding falls ▪ Bed mobility ▪ Ambulation ▪ Stairs ▪ Dressing 	
8. Transfers	28-29
<ul style="list-style-type: none"> ▪ Bed ▪ Chairs and toilets ▪ Tub/shower 	
9. Vehicles	30
<ul style="list-style-type: none"> ▪ Getting into the vehicle ▪ Getting out of the vehicle 	
10. Energy conservation and joint protection	31
<ul style="list-style-type: none"> ▪ Activities ▪ Household tips 	
11. Appendices	32-33
<ul style="list-style-type: none"> ▪ Phone numbers ▪ Appointment list ▪ Notes 	

1. General information

Introduction

This booklet will help you know what to expect about total knee replacement and will also be a great reference source during your recovery. Two things are likely to be true if you are reading this information. You have been living with joint pain for some time and your doctor has said a knee replacement is an option for you. Those having a total knee replacement are people with chronic joint pain that interferes with daily life. A successful knee replacement and rehabilitation program can help your knee pain. It can help you move better at work, play and rest. Your new knee can give you a quality of life you may not have enjoyed for some time.

Frequently asked questions

So what do you need to prepare for and what can you expect? Knowing what to expect before, during and after surgery can help you to recover more quickly. It can also help you and your caregiver recognize and avoid potential problems. There are common questions patients have about total knee replacement. Answers to some questions follow. However, it's best to discuss your specific questions with your surgeon. Note that some questions have a reminder to do just that.

What is a total knee replacement?

A total knee replacement is pretty much what it sounds like. Your surgeon makes an incision over the front of your knee so the damaged parts of your knee can be replaced with artificial parts. The artificial parts are usually made of metals, ceramics or plastics. The parts are either cemented or “press fit” into the bone. Your surgeon decides which method is best for you. One part of the prosthesis fits over the end of the upper leg bone (femur) and the other fits over the top of your lower leg bone (tibia). The underside of the knee cap (patella) may or may not be replaced, depending on need. The incision is closed with stitches, staples and/or surgical glue. The corrected knee spacing often improves the bowed or knock knee deformity. Any arthritis in that knee is now gone. Pain should lessen and function improves over time.

Why do most people have knee replacements?

One reason is to have less pain. There may be the desire to add walking and exercise back to daily life. Activities such as dressing, grocery shopping and others are pleasant when they become easier. Many people feel improved quality of life overall.

What are the major risks related to total knee replacement surgery?

The risks of infection and blood clots may be lessened by use of antibiotics and anticoagulant medication. Special measures are taken in the operating room to reduce the risk of infection. The chances of an infection or blood clot are very low. Your surgeon will discuss the risks with you.

Am I too old for this surgery?

Age is not an issue if you are in good health and want to continue living an active life. You may be asked to see your primary care doctor about your overall health and readiness for surgery.

Will I need a blood transfusion?

You may need blood during or after surgery. Discuss with your surgeon prior to surgery the options that may help decrease the need for a blood transfusion.

Will I be put to sleep for surgery?

General or regional anesthesia may be possible for your surgery. General anesthesia allows you to sleep. Regional anesthesia provides numbness of a certain body region with other medication given to cause sleepiness. Several factors are included to decide which type of anesthesia is best for you:

- Past experience with surgery
- General health and physical condition
- Reactions or allergies you have had to medications
- Risks of each type of anesthesia
- Input from your surgical team and you

How long will my surgery last?

One to three hours is the normal range. Time often depends on the equipment and anesthesia. Some time is also spent preparing you for surgery and anesthesia.

Will I have pain after surgery?

You will have discomfort after surgery, but the discomfort will lessen greatly over the first several days. Medication can be given to keep you comfortable. It will also help you to participate in therapy. Quicker than you might think, your medication will be reduced to an over-the-counter pain reliever and then none.

When can I get up?

You may get up on the day of surgery. You will need the help of the healthcare team until your therapist tells you otherwise. For your safety, please do not get up with help from your family or friends.

Will I need to use a walker?

Your therapist will determine if you use a walker, crutches or cane after surgery. This aid will be needed for a certain length of time, depending on your specific surgery. If you receive a nerve block, you may need to use a knee immobilizer for the first day after surgery to prevent your knee from buckling.

When can I shower?

You can shower with assistance when approved by your surgeon. Protection of your incision during showers will be discussed with you. Ask your surgeon how long you should wait until you can take a tub bath.

Frequently asked questions (continued)

How long will I stay in the hospital?

Most patients go directly home after 1-3 days in the hospital. Some patients, however, may need to spend a few extra days in a hospital-like setting, or rehabilitation center.

Will I need physical therapy at home?

To achieve the best results from this surgery, patients must actively participate in therapy and take responsibility for performing the home exercise program as instructed.

Will I need special equipment after a total knee replacement?

Besides a gait aid, an elevated toilet seat, commode or toilet safety rails, shower bench or chair, grab bars, and other assistive equipment may also be necessary for safety and use at home. Equipment may be arranged before or during your hospital stay.

Can I drive after surgery?

Please do not drive immediately after surgery or while taking pain medication. Generally, driving resumes four to six weeks after surgery. You can ride in a car after surgery by following the techniques and precautions outlined by your therapist. Please discuss driving with your surgeon.

When can I have sex after knee replacement surgery?

Generally, most people wait for a few weeks after surgery to resume sexual activity. Your incision, muscles and ligaments need time to heal. You can resume sexual activity when you feel ready. Ask your doctor about any questions you may have.

When can I return to work?

Most often, at least 4-6 weeks are needed off from work. It depends upon the type of work you do. Discuss your specific work activities with your surgeon.

When can I play sports again?

You are encouraged to participate in low-impact activities after your full rehabilitation. These activities include walking, dancing, golfing, hiking, swimming, bowling and gardening. High-impact activities such as running and basketball are not recommended. Discuss specific activities with your surgeon.

How often will I need to see my provider?

You will see your surgeon or physician assistant within a couple weeks after surgery. Additional visits will be scheduled, so be sure to write them on your calendar. Discuss frequency of follow-up visits with your surgeon.



Your healthcare team

Your healthcare team members have special training and interest in the area of orthopedics. They use extensive knowledge to guide you from hospital discharge through rehabilitation. It is important for you to be an active partner with your healthcare team in order to have the best possible outcome. This team includes many, but here is a list of the main members.

Anesthesiologist/certified registered nurse anesthetist

A physician or advanced practice nurse responsible for your anesthesia for your surgery. The anesthesiologist or nurse anesthetist may also be involved in pain management issues before and after surgery.

Case manager/discharge planner

A registered nurse or social worker who works closely with your surgeon and the other team members to help you make decisions about your discharge plan. This may include outpatient therapy, home equipment and/or any skilled nursing care if needed. The case manager/discharge planner can also answer your questions about insurance coverage for services and equipment.

Nurse practitioner (NP)

A registered nurse with advanced skills and education who works with your surgeon to manage your care. An NP can diagnose and treat healthcare problems. An NP can prescribe medications as well as order and interpret needed tests. Nurse practitioners often see you before, during or after total joint replacement surgery.

Occupational therapist (OT)

A healthcare professional who is responsible for planning safe ways for you to complete your daily activities, such as bathing. The OT may partner with the physical therapist to complete your exercise routine. The OT offers ideas to assist you to create a safe home environment. Adaptive equipment is used to simplify self-care tasks while conserving energy.

Orthopedic surgeon

A physician/surgeon who performs your total knee replacement and directs your care. This doctor guides your rehabilitation and follows you through office visits.

Physical therapist (PT)

The physical therapist plans your physical rehabilitation after your total knee replacement. This therapist will help you regain range of motion, muscle strength and balance to walk safely with your new joint. You will learn how to use assistive devices such as a walker or cane, which will be needed temporarily after your surgery. Sometimes patients will attend physical therapy before surgery to learn exercises to build strength.

Physician assistant (PA-C)

A healthcare professional who works with your physician to prescribe, diagnose and treat healthcare problems. Physician assistants often see you before, during or after total joint replacement surgery.

Registered nurses (RNs)

Professional nurses are responsible for managing your bedside nursing care following your surgery. Nurses use the surgeon's instructions to guide your care. RNs provide education to you and your family about your health and safety needs. This includes information before and after surgery and helps you plan for your discharge from the hospital. RNs also provide care and education in your surgeon's office.



2. Before-surgery checklist

6-8 weeks before surgery

Advance healthcare directive (advance directive, living will)

- If you do not have an advance healthcare directive, this is a good time to complete one before your surgery. This form will help explain your healthcare wishes to the healthcare team and hospital staff. Hospitals have the forms for you to complete if needed.
- If you have an advance healthcare directive, please bring a copy along to the hospital.

Assistance

- Ask your spouse, children, neighbors or friends if they can help you for a few weeks after returning home from surgery.

Dental exam

- Some surgeons may require you to see your dentist before surgery. You can make that appointment now in case more than routine dental cleaning is needed. It is important to make sure you do not have gum disease or cavities. Infections anywhere in your body may place you at a higher risk for complications after surgery. Unless approved by your surgeon, do not have any dental procedures or cleanings within six weeks of your surgery.

Diet

- Eat as healthy as possible with the appropriate servings of fruits, vegetables, protein, whole grains and low-fat dairy. An adequate iron supply is important before surgery. Good sources of iron include lean red meats, fortified cereals and leafy green vegetables such as spinach or kale.
- Discuss starting a multivitamin and iron supplement with your primary care doctor. These supplements may need to be stopped 1-2 weeks before surgery, so now is the time to get some benefit from the added nutrients.
- Fluids are important for helping you to have regular bowel movements. Most of that fluid should be water or come from fruits and vegetables.

Equipment

- A case manager will order a walker, crutches and bedside commode to be used after your surgery.
- Insurance does not typically cover some items that may be helpful in your recovery. Most of the following items can be found at a medical supply store and some can be found at pharmacies, home improvement stores, thrift stores or online:
 - An elevated toilet seat.
 - Toilet safety rails are sometimes needed for safety after total knee replacement. The bedside commode also has arms and can usually fit directly over your home toilet. It may also fit in your shower.
 - A sock aid can be helpful to put on a pair of socks by yourself.

Equipment (continued)

- The reacher/grabber/dressing stick can help to pull up your pants, reach for dropped items, or obtain items that are higher than arms can reach.
- The long-handled sponge can help clean hard-to-reach places during bathing.
- Safety bars can be installed by a handyman in the shower area and wherever else needed.
- A tub bench/shower chair can allow safe transfer to and seating in the shower or tub.
- A handheld shower can be handy for bathing from the tub bench/shower chair.
- A basket or bag that can attach to a walker or crutches is convenient for carrying needed items.
- A travel mug or thermos with a secure lid can allow safe transport of a liquid such as water.
- Elastic shoelaces can be helpful to secure shoes instead of trying to tie laces after surgery.
- A long-handled shoehorn can assist in putting on shoes without having to bend the knee so far.

Exercises

Building strength can help you to have a successful outcome after surgery.

- Low-impact exercise sessions are sponsored by the Arthritis Foundation and many local senior centers and gyms. Water exercise, walking in waist-high water or swimming 2-3 times a week can also increase strength and endurance.
- There are some simple, effective exercises you can do in your own home from now through your rehab after surgery. Please see the exercises listed in the “Post-op exercises, goals and activity guidelines” section. Feel free to do the leg exercises with both legs. Do arm exercises with both arms to build strength to help you best use a walker, crutches or cane. Do not hold your breath while exercising.

Medical appointment

You may be asked to see your primary care doctor prior to surgery. Ask your surgeon which tests are preferred prior to surgery so you can tell your primary care doctor.

Examples include:

- EKG (electrocardiogram)
- Lab
- Chest X-ray
- Urinalysis

Smoking

- Smoking is known to cause breathing problems. It can also decrease the rate of healing. Try to decrease smoking or seek methods to stop. Your primary care doctor can offer ideas to do so.

Work

- Ask your surgeon to sign a work release form if needed. Request a minimum of 4-6 weeks off work with notice that rehabilitation may take longer. Discuss the need for a work release with your surgeon.

10-14 days before surgery

Place of worship

For those who want to, notify your place of worship as desired for requested prayers or visitors while you are in the hospital.

Home changes

Some changes may be needed for you to return home safely after surgery. It's best to have the bathroom, bedroom and living areas on one single floor. If this is not the case, you may want to place a bed on the first floor for a short while. Or you may choose to stay with a relative or friend for a month or so after surgery.

- Purchase night lights for your bathrooms and hallways.
- Move loose fitting, comfortable clothes and pajamas to a place that's easy to access. Keep items in drawers that are at waist level only.
- Remove throw rugs. Electrical cords should be out of the line of traffic. Both rugs and cords can be safety hazards.
- Move furniture and objects that do not allow a clear walking path.
- Consider temporarily placing a small pet with a loved one. A pet running around your legs could cause you to fall.
- Identify chairs with arms in the living and kitchen areas that have a firm seat. An extra cushion or pillow can be used to build height.
- Move the most often-used kitchen items to at least waist level counters or cupboards.
- Make some meals that can be frozen and easily reheated.
- Consider another option for laundry if your washer and dryer are not on the living level.
- Place a rubber mat or non-skid adhesive on the floor of the tub or shower.

Mail

- Arrange for someone to collect your mail or place it on hold at the post office.

Medications

A healthcare professional will discuss with you what medications to stop before surgery. Medications that are often stopped prior to surgery include:

- Aspirin.
- Some anti-inflammatory medicines (like Motrin, Aleve, etc.).
- Some vitamins.
- Fish oils.
- Herbal supplements (such as ginseng, ginkgo biloba, garlic pills).

Medications (continued)

- Herbal teas.
- Fortified cereals that contain vitamin E.
- Pain medications that contain aspirin.
- Some over-the-counter and prescription pain medications can continue until the time of surgery.
- Please be honest about your drug and alcohol use. It is important to know as it can relate to your anesthesia and pain management.

Preoperative class

- Attend a pre-op class if one is offered by your surgeon's office or hospital.
- Discuss class times/dates with your surgeon's office. An online class is available.

Several days before surgery

Bills

- Pay bills so they are up-to-date through a few weeks after your return home.

Clean

- Clean the house, including vacuuming the carpets. Do laundry. Refer to "Home changes" under "10-14 days before surgery."

Groceries and supplies

- Purchase food items and needed supplies that can be used after your return home. It's handy to have frozen peas or corn on hand as they can be used for ice packs.

Infection

- Notify your surgeon's office right away if you think you may have a cough, fever or an infection of any kind: bladder, skin, tooth, respiratory tract, etc.

Transportation

- Confirm how you will get to and from the hospital. You are not allowed to drive yourself home from the hospital. Assure that the passenger seat reclines and can fully move backward.



1 day/night before surgery

What to pack

- Your most current list of medications, herbals, vitamins and supplements, noting which ones have been stopped and when.
- Loose pajamas or short nightgown and short robe if desired.
- Underwear.
- Loose shorts, jogging suit, sweats, tops.
- Slippers with backs and rubberized sole or walking sneakers/shoes with Velcro closures or elastic shoelaces.
- Socks.
- Personal toiletries (toothbrush, toothpaste, denture cleanser/cup, deodorant, electric or other razor, shaving cream, comb, no powders).
- Eyeglasses.
- Hearing aid and batteries.
- Makeup, hand mirror if desired.
- CPAP or BiPAP machine settings, tubing and machine.
- Long-distance calling card or cell phone.
- Driver's license or photo ID, insurance card, Medicare or Medicaid card.
- Copy of your advance healthcare directive.
- Important telephone numbers (include person taking you home).
- Hard candy or gum.
- Books, magazines or hobby (like knitting, cards, etc.).
- This education information, so you can review items with your healthcare team.

What not to do

- Do NOT eat or drink anything after the time you were instructed. Ice chips, gum or mints are not allowed.
- Do NOT bring valuables — no jewelry, credit cards, checkbooks or more than \$20 in cash.
- Do NOT bring your own medications.

Showering

- The night before or morning of surgery, wash your hair and rinse it well.
- After washing your hair, shower using the special soap that was given to you by the hospital or surgeon's office. Follow the directions provided on how to use.
- Do not shave your legs.
- Pat dry with a clean towel.

Showering (continued)

- Do NOT use lotions or powder.
- Put on newly washed pajamas/nightgown or clothes.
- Sleep on freshly laundered linens.

3. Hospital care



Day of surgery

- Please do not wear makeup or jewelry; remove fingernail and toenail polish.
- Please take your medications as instructed with the smallest amount of water possible.
- Do not eat or drink anything else. You may brush your teeth.
- Do not take insulin unless instructed otherwise.

It's important to arrive at the hospital on time. You will complete any needed forms. You will be taken to the pre-op area where nurses will prepare you for surgery. You will put on a hospital gown and go to the bathroom. You may have an IV started in your vein. You will discuss your anesthesia with an anesthesiologist or nurse anesthetist. You may be given medication to relax you. You will be taken to the operating room for your surgery. After your surgery is completed, you will be taken to the recovery room for up to several hours. Nurses will watch you closely until you are stable and then transport you to the hospital unit. Your surgeon will talk with your family after surgery has ended.

Activity

Your bed may have a trapeze bar above it to help you position yourself. You will be assisted when you turn in bed. Active movement after your surgery helps to prevent possible complications. Some patients get out of bed on the day of surgery. A nurse or physical therapist will help you do this. Therapists will teach you movements that you need to avoid, exercises to strengthen your muscles and how to walk safely. You will increase activity daily to enhance your strength and mobility. You will walk farther each day. You will perform exercises several times per day. Your rehabilitation program will continue after you go home. It is important to get adequate rest between your therapy and activities. Ask your nurse to unplug your phone and close your door for a nap. You also need a good night's sleep to give you energy for the next day. Do not lie in bed with a pillow under your knee as this will lead to tightness in the back of the knee. This could cause a permanent loss of knee function.

Breathing

There may be an oxygen tube in your nose. Your nurse likely will remove the tube later that day. You will do deep breathing and coughing exercises for several days after surgery. You may be asked to use a breathing device as well. This is done to expand your lungs and help get oxygen to your tissues.

Circulation

It is important to perform leg exercises to help your blood circulate. You will know many of the exercises since you did them at home before surgery. Your therapists will teach you new exercises too. There may be snug stockings and/or sleeves wrapped around your legs or feet. If present, the sleeves fill with air and then relax. The purpose is to help increase the blood flow to your legs and prevent blood clots. You will be given medication to reduce the chance of a blood clot. Smoking is not allowed in the hospital. Smoking will slow your healing process. The foot of the bed should be flat. There should be no pillow under your affected knee. It is OK to have a pillow under both ankles.

Discomfort

You will have some pain. Please take pain medication as prescribed, but do not wait to take the pain medication until the pain becomes severe. An ice pack is used on your knee to lessen pain and swelling. Your pain will lessen every day.

Food/fluids

You will have fluids going through your IV at first. The IV will be stopped when you are eating and drinking well. You will likely start with a liquid diet. Your nurse will help you decide when you can eat solid food. Increasing food slowly may help to avoid nausea that sometimes happens after anesthesia or use of pain medication. You may not be very hungry for a while. It is important that you eat as best you can in order to heal well.

Going to the bathroom

You may have a tube to drain the urine from your bladder. This catheter is usually removed the day after surgery. After that, your nurse will help get you out of bed and go to the bathroom. It may take a day or more to have a bowel movement. Anesthesia and pain medication can cause constipation. Drink plenty of fluids and eat whole grains, fruits and vegetables. A stool softener or laxative can help normal bowel function to return.

Wound care

You may have a big dressing on your knee. You may have a drain coming from your knee that is connected to a container. That drain will likely be removed before you go home. Your incision may have sutures, staples, surgical glue or Steri-Strips.

Day after surgery to discharge

Your knee dressing will be changed as directed by your provider. Some dressings may stay on for 7-10 days. Continue to cough and deep breathe. You will walk to the bathroom with assistance. Solid food will be offered. Drink fluids to keep hydrated. You will switch to pain pills if pain medication had been given through your IV. Wear loose clothes. You will work with therapists to practice exercises, walk and climb stairs. Repeating exercises throughout the day will help you gain strength. Discuss discharge options and needed equipment with the case manager/discharge planner. You will be discharged to home if you have met therapy goals. Some may be discharged to a skilled nursing or rehabilitation facility based on therapy goals.

4. Caring for yourself at home

Anticoagulant medication

You will be taking a medication to prevent blood clots from forming. You may also need lab work done to make sure your medication is working properly. Take this medication for as long as directed by your doctor. Usually, you will be on it anywhere from 3-6 weeks after your total knee replacement. Contact your doctor right away if you notice easy bruising, nosebleeds or blood in your urine.

Changes after surgery

You may have less of an appetite for a while. Be sure to drink plenty of fluids. Your energy level may be less than usual for a few weeks after surgery. Constipation may result from pain medication. Use a stool softener or laxative if needed. Your new knee may cause your leg to feel longer. The joint likely gained some height that was lost prior to surgery.

Coping with stress

Undergoing surgery can be a very stressful event for anyone. It can also be stressful to rely on others to help while you are healing. However, having support from friends and family is needed for full rehabilitation. Having realistic goals and keeping a positive outlook can help. Make note of small achievements. Some people find that deep breathing and relaxation techniques help. Many hospitals have resources available (social workers, counselors, spiritual care, etc.) if you need additional support. Remember to ask for help when you need it.

Discomfort

It is important to take pain medication with food and as prescribed by your surgeon. It may be helpful to take your pain medication about 30 minutes before your planned therapy/exercise session. Don't wait until discomfort gets the best of you to take medication. Do not drink alcohol or drive while taking pain medication. As you have less discomfort, start to decrease how many pain pills you are taking and how often you are taking them. Eventually, you will no longer need pain medication. Applying an ice pack to your knee for 20 minutes several times per day can help the discomfort too. A bag of frozen corn or peas can easily conform to your knee. Change your position at least every 45 minutes during the day to avoid stiffness. Do not elevate your leg by placing a pillow only under your knee. A pillow should be placed under the entire leg for elevation. Numbness around the incision may be temporary or permanent. Contact your surgeon if your discomfort does not respond to the above.

When taking opioid (narcotic) pain medications, safety is very important. Below are tips for you and your family:

- For family members, notice if the patient exhibits slow, shallow breathing, snoring or difficulty breathing. If the patient is hard to wake up, call 911.
- When at home, store your pain medications in a secure place that is not normally accessible to friends, family or children.
- Before you throw out the prescription bottle, remove the label or black out the information on the label to protect your identity and prevent diversion of the medication.

Discomfort (continued)

When you no longer need your opioid pain medication, proper disposal of it can assure safety. Here are some options:

- Contact your local police/fire station/city household trash removal services or ask your pharmacist if there is a take-back program in your community.
- For a nominal fee, some pharmacies will provide you an envelope as part of a mail-back program.
- If there is not a take-back program in your area, the following is recommended. Remove the medication from the prescription bottle and place it in a container with a lid on it or a sealable bag. Mix the pills with used wet coffee grounds or used kitty litter. Place the container or bag in a grocery bag then throw into the trash receptacle.
- Based on the opioid pain medication prescribed, follow the disposal instructions outlined in the product information provided.

Equipment

You will use a rolling walker, crutches or a cane to help you walk. An elevated toilet seat, bedside commode or toilet safety rails can be very handy for the bathroom. A bedside commode can often fit over the toilet and also be used to sit on in the shower. You cannot get down into the bathtub until mobile enough to do so. Other adaptive equipment such as a reacher, sock-aid, long-handled shoe horn, long-handled sponge, handheld shower, grab bars and elastic shoelaces may prove useful to you as well. Please refer to the “6-8 weeks before surgery” section for further information.

Incision care and dressing changes

Your dressing should be changed according to the instructions you were given at the hospital. You and your caregiver should wash your hands before and after changing your dressing. Condition of the incision should also be noted. There will be some swelling initially, especially after exercise. There should be no redness, hotness, odor, increased drainage or opening of the incision. Call your surgeon’s office if you notice those changes. Usually, sutures or staples are removed 10-21 days after surgery by a healthcare professional, based on tissue healing. Some sutures are under the skin and do not require removal. If you do not know, call to find out whether or not to get your incision wet while showering.

Handicap parking sticker

Please ask your surgeon to provide you with the form necessary to use handicap parking.



5. Preventing/recognizing potential complications

Blood clots

You may be asked to wear snug stockings at home. Elevate your surgical leg above heart level for short periods throughout the day. Take your anticoagulant medication as directed. Perform your exercises and walk. These are all ways to prevent blood clots.

Contact your surgeon right away if any of the following occur:

- Pain or excessive tenderness in your leg or calf
- Redness of your calf
- Swelling in your foot, ankle, calf or thigh

A blood clot in the leg can move to the lung, leading to serious complications, including death. **Call 911 for the following medical emergencies: sudden onset of shortness of breath, chest pain, coughing up blood or unexplained anxiety when breathing.**

Infections

Hand washing (or using an alcohol-based hand cleanser) is the most important step for preventing infection.

- Avoid people who may have the flu or a cold.
- Wash your hands prior to changing the dressing over your incision. Your caregiver also needs to do this.
- Keep your incision dry, unless your surgeon has approved getting it wet.
- Eat a healthy diet and drink plenty of fluids to help prevent infection.

Your surgeon may recommend that you take antibiotics to prevent infection before you undergo future dental procedures or other invasive medical procedures. Be sure to discuss this during your first post-op visit unless already done.

Contact your surgeon right away if you note any of the following:

- Increased redness, heat or swelling around incision
- More drainage or foul smelling drainage from incision
- Increased pain in the knee
- Persistent fever greater than 100° F or chills

Contact your primary care doctor if you think you may have an infection elsewhere. This includes bladder, sinus, tooth, etc.

Other reasons to contact your surgeon

- New severe knee pain
- Unable to walk or put weight on your leg
- Increased numbness or tingling of the leg
- Knee appears deformed
- If you happen to fall

Weight loss

An ideal body weight puts the least amount of stress on your new knee. One pound of weight loss unloads 4 pounds of joint stress in people with arthritis. Following an exercise and walking program will promote wanted weight loss. A dietitian can make suggestions for a healthy weight loss meal plan. Talk to your surgeon about visiting a dietitian if desired.

6. Post-op exercises, goals and activity guidelines

Exercise is very important after a total knee replacement. Exercise will help you strengthen your knee and other muscles. It will also help you bend your knee at least 90 degrees. Continue with your walking program and challenge yourself to go farther and farther every day. The more you are active and exercise, the more mobile you will become.

Activity goals for week 1-2

- Walk at least 300-500 feet with your walker, crutches or cane as instructed.
- Bend your knee to 90-105°.
- Straighten your knee completely by lying flat for 30 minutes several times per day; place a towel roll under your ankle.
- Shower and dress by yourself.
- Gradually resume light home duties with help as needed

Activity goals for week 3-4

- Complete any remaining goals from week 1-2.
- Wean from a walker or crutches to a cane or one crutch as instructed.
- Walk at least the distance of four blocks.
- Bend your knee 90° up to 120°.
- Straighten your knee completely by placing only the foot on a stool for 30 minutes several times per day.
- Resume all light home duties with help as needed.
- Return to light work duties if approved by your surgeon.

Resume all home duties and low-impact activities. Review all exercises with your physical therapist. Perform your exercises 10-15 times, 2-3 times daily, unless noted otherwise. Feel free to do the leg exercises with both legs. Be sure to follow your knee precautions (see the "Activities of daily living" section). Do not hold your breath while exercising.

Activity goals for week 5-6

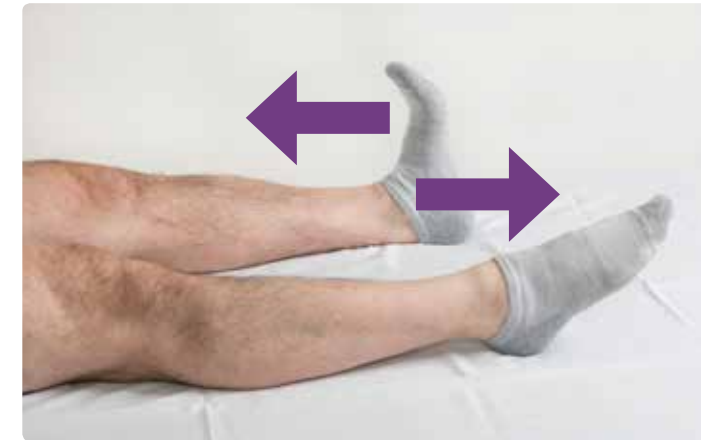
- Complete any remaining goals from weeks 1-4.
- Walk with a cane or crutch to complete the distance of 4-8 blocks.
- Go up and down stairs with a rail from one foot at a time to the regular way.
- Bend your knee 105° up to 120°.
- Straighten your knee completely by placing only the foot on a stool for 30 minutes several times per day.
- Drive a car at 6 weeks if approved by your surgeon.
- Resume all light home duties by yourself.

Activity goals for week 7-12

- Complete any remaining goals from weeks 1-6.
- Walk without a cane or crutch without a limp the distance of 8-16 blocks.
- Go up and down stairs with a rail.
- Bend your knee 90°-120°.
- Straighten your knee completely by placing only the foot on a stool for 30 minutes several times per day.

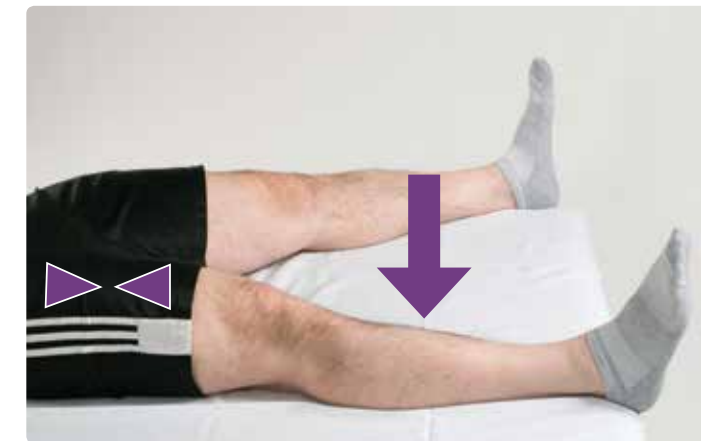
Leg exercises

Exercise is very important after a total knee replacement. Exercise will help you strengthen your knee and other muscles. It will also help you bend your knee at least 90 degrees. Continue with your walking program and challenge yourself to go farther and farther every day. The more you are active and exercise, the more mobile you will become.



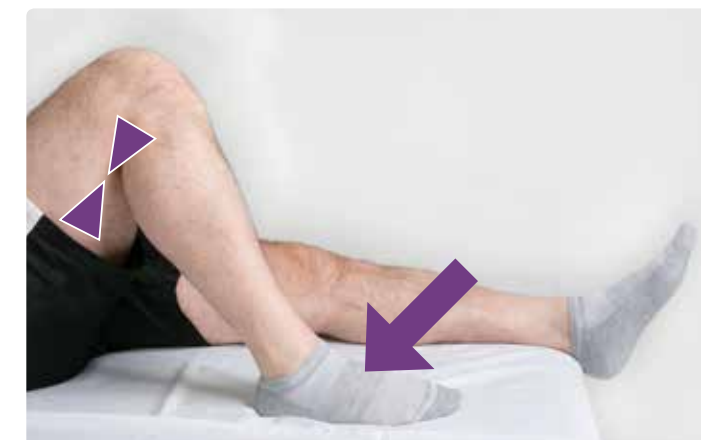
Ankle pumps

While sitting in a chair or lying on your back in bed, straighten your knee and slowly push your foot forward and backward. Repeat 20 times with both ankles, 2-3 times per day.



Quad sets

While lying on your back in bed, press your knee into the mattress and tighten your muscle on the top of your thigh. Hold for a count of 5-10 seconds. Do not hold your breath. Repeat 10 times with both legs, 2-3 times per day.



Hamstring sets

While lying on your back in bed, keep your surgical leg bent and the other leg straight. Tighten the muscle on the back of your affected leg. Push the heel down into the bed with the surgical leg. Hold for 5 seconds. Repeat 10 times with both legs, 2-3 times per day.

Leg exercises



Gluteal sets

While lying on your back in bed, squeeze your buttock muscles together and hold for a count of 5-10 seconds. Repeat 10 times, 2-3 times per day.



Heel slides

While lying on your back in bed, bend your knee and slide your heel to your buttock. Slide it back out straight. Use a plastic bag under your foot if it is easier that way. Repeat 10 times with the surgical leg, 2-3 times per day.



Lying knee extension

Lie on your back in bed. Place a rolled up towel under the lower part of your thigh but not behind your knee. Lift your foot and straighten your knee. Do not raise your thigh off the roll. Repeat 10 times with the surgical leg, 2-3 times per day.

Leg exercises



Straight leg lifts

While lying on your back in bed, bend your nonsurgical knee, tighten your thigh muscles of the surgical leg and lift the surgical leg up several inches off the bed. Keep your knee straight and toes pointed up. Hold the leg up for 5-10 seconds and then lower it back onto the bed. Repeat 10 times with the each leg, 2-3 times per day. Do not continue if this hurts your lower back.



Sitting knee extension

While sitting in a chair with your back against the chair back, straighten your knee and hold for a count of 5-10 seconds. Lower your leg back down to the floor. Repeat 10 times with the surgical leg, 2-3 times per day.



Sitting knee extension with stool

While sitting in a chair, place the foot of your surgical leg on top of another chair seat or stool. Press your knee down and hold for 30 seconds. Repeat 10 times, 2-3 times per day.

Leg exercises

Sitting knee flexion

While sitting in a chair, scoot a little forward. Place a belt or towel under your foot while holding the edges in your hands. Bend your knee as far as you can with the belt/towel. Scoot forward a little more to feel more of a stretch at your knee. Hold for 30 seconds. Repeat 3-5 times with the surgical leg, 2-3 times per day.



Standing hip extension

While standing up, hold the back of a chair. Bring your leg backward as far as you can. Keep your knee straight. Repeat 10 times with the surgical leg, 2-3 times per day.



Heel lifts

While standing up, hold on to the back of a chair. Rise up on your toes. Repeat 10 times, every hour while awake.



Leg exercises

Standing knee flexion

While standing up, hold the back of a chair. Bend your knee back behind you. Slowly lower it back to the ground. Repeat 10 times with the surgical leg, 2-3 times per day.



Standing knee lifts

While standing up, hold the back of a chair. Raise one knee at a time as if marching in place. Lift your knee to at least waist level. Hold your knee up for 2-3 seconds. Slowly lower it back to the ground. Repeat 10 times with the surgical leg, 2-3 times per day.



Standing hip abduction/adduction

While standing up, hold the back of a chair. Move your surgical leg out to the side. Keep hip, knee and foot pointed straight forward. Keep your knee straight. Slowly lower it back down to the ground. Repeat 10 times with the surgical leg, 2-3 times per day.



Leg exercises

Toe lifts

While standing up, hold the back of a chair. Lean body weight onto your heels. Toes should be off the ground. Slowly lower toes back to the ground. Repeat 10 times, 2-3 times per day.



Arm chair pushups

Sit in a chair with feet flat on the floor. Place hands on the armrests. Straighten your arms while raising your buttocks off the chair. Repeat 10 times, 2-3 times per day.



7. Activities of daily living

Safety and avoiding falls

There are many things you can do to keep your joints safe. Please follow these suggestions to avoid injury and falls:

- Keep throw rugs put away.
- Be aware of floor hazards such as small objects, pets and uneven surfaces.
- Provide good lighting; use nightlights and a flashlight as needed in the halls, bathroom and bedroom.
- Keep cords out of the walking path.
- Wear slippers or shoes with backs; soles should be rubber for good traction.
- Use chairs with arms to help you get up and down.
- Get up slowly from a chair or the bed in case you are dizzy.
- Do not lift heavy objects for at least three months. Discuss with your surgeon when it's safe to resume heavy lifting.
- Stop to think before taking on a new task.
- Change positions frequently to avoid stiffness.
- Get out of the car every 1-2 hours during travel for a short walk to lessen stiffness.
- Keep your appointments with your surgeon as instructed.

Bed mobility

- Use a pillow between your knees only for comfort when on your side.
- Bend your unaffected leg to help push yourself to a new position.

Ambulation

A walker, crutches or cane should be fitted to your height by a physical therapist or healthcare professional. If you have had both knees replaced at the same time, the "surgical" leg means the weaker one.

Walker

1. Stand up straight with the walker a few inches in front of you.
2. Place each hand on the hand grips of the walker.
3. Take a step into the walker with your surgical leg.
4. Lean on the walker to give balance and support.
5. Take a step with your nonsurgical leg.
6. Move the walker forward one step.
7. Repeat the above until you've reached your target.

Ambulation (continued)

Crutches

Instructions should be followed as taught to you by your therapist. There are different ways to use crutches. You should use the method that is most appropriate for your needs.

Cane

1. Stand up straight with the cane held by your hand on the nonsurgical side.
2. Move the cane forward one step.
3. Move your surgical leg forward in line with the cane.
4. Step past the cane with the nonsurgical leg.
5. Repeat the above until you've reached your target.

Stairs

General rule of thumb: Lead up stairs with your nonsurgical leg and lead down stairs with your surgical leg.

Going up stairs

NOTE: Your therapist should give you detailed instructions on how to go up and down stairs with your walker, crutches or cane. Below are general reminders related to stairs:

1. Face the stairs. Hold the handrail with one hand.
2. Hold the walker, crutches or cane with the other hand, push down on rail and use as an assistive device.
3. Step up with the nonsurgical leg.
4. Step up with the surgical leg.
5. Move the crutches or cane up onto the same step.

Going down stairs

You may use a walker to go down one step if your therapist instructs you to do so.

1. Face the stairs. Hold the handrail with one hand.
2. Hold the walker, crutches or cane with the other hand on one step below you.
3. Step down with your surgical leg.
4. Step down with your nonsurgical leg.
5. Move the walker, crutches or cane down one step.

Dressing

Putting on pants and underwear

1. Be sure all needed items are within easy reach.
2. Sit down on a supportive surface to maintain your balance.
3. Use a reacher or dressing stick to grasp the clothing. The reacher or dressing stick can be used to guide the waist band over your feet and knees. Place your surgical leg in first, followed by your nonsurgical leg.
4. Pull your pants up to your thighs.
5. Stand with the walker in front of you. Pull your pants up the rest of the way.

Dressing (continued)

Taking off pants, underwear or socks

1. Be sure all needed items are within easy reach.
2. Back up to a chair or bed.
3. Unfasten your pants and allow them to fall to the floor. Push your underwear off your hips.
4. Lower yourself down to a chair or bed.
5. Use a reacher or dressing stick to grasp the clothing.
6. Remove clothing from your nonsurgical leg first, followed by your surgical leg.

Putting on socks

1. Be sure all needed items are within easy reach.
2. Sit down on a supportive surface to maintain your balance.
3. Slide the sock fully onto the sock aid.
4. Bend your knee slightly.
5. While holding the cord with both hands, drop the sock aid in front of your foot.
6. Slide your foot into the sock aid.
7. Point your toes and straighten your knee. Pull the sock on and keep pulling until the sock aid pulls out of the sock.

Putting on shoes

NOTE: Shoes should have rubber soles. Do NOT wear high heels, shoes without back or flip flops. Wear one of the following: sturdy slip-on shoes, Velcro closure shoes or shoes with elastic shoelaces. It may be too difficult to tie your own shoes at first.

1. Be sure all needed items are within easy reach.
2. Sit down on a supportive surface to maintain your balance.
3. Use a long-handled shoehorn, dressing stick or reacher to slide your shoe in front of your foot.
4. Lean back as you lift your leg to place your toes inside the shoe.
5. Place the shoehorn inside the shoe.
6. Step down into your shoe, sliding your heel downward against the shoehorn.
7. Fasten your shoe by using the reacher to close the Velcro straps or pull elastic shoelaces tight.

Taking shoes off

1. Be sure all needed items are within easy reach.
2. Sit down on a supportive surface to maintain your balance.
3. Use a reacher to unfasten your Velcro straps or elastic shoelaces.
4. Use a long-handled shoehorn, dressing stick or reacher to slide your shoe off of your foot.



8. Transfers

Bed

Getting into bed

1. Back up to the bed until you feel the mattress behind your legs. Place yourself halfway between the foot and head of the bed.
2. Reach back with both hands and sit down on the edge of the bed. Scoot back toward the center of the mattress. Slick sheets, slick pajamas or sitting on a plastic bag may make scooting easier.
3. Move the walker out of your way. Keep it close by.
4. Scoot your hips around to face the foot of the bed.
5. Lift the close leg into bed while scooting around.
6. Lift the other leg into bed.
7. Scoot your hips toward the center of the bed.

Getting out of bed

1. Move your hips to the edge of the bed while leaning on your elbows.
2. Sit up while lowering your nonsurgical leg to the floor.
3. Scoot to the edge of the bed while using your hands behind you.
4. Use both hands to push off from the bed.
5. Get balanced before reaching for the walker.



Chairs and toilets

Sit in chairs with firm seats for ease of movement. An extra cushion or pillow may be needed on the seat of a low chair if there is no other choice for sitting. It's safer to keep both feet on the floor or on a stool. A raised toilet seat, a three-in-one bedside commode or toilet safety rails may be needed over your toilet for about 12 weeks after surgery. Such equipment is no longer needed once you can get up and down from the toilet safely on your own.

Sitting on a chair or toilet

1. Take small steps and turn until your legs are against the toilet/chair.
2. When using armrests, reach back for both armrests and lower yourself onto the toilet. If there are no armrests, keep one hand on the middle of the walker/crutch/cane while reaching back for the toilet seat with the other hand.

Chairs and toilets (continued)

Getting up from a chair or toilet

1. When using armrests, push yourself up from the armrests. If there are no armrests, keep one hand on the middle of the walker/crutch/cane and push off from the toilet seat with the other hand.
2. Gain your balance and place your hands on the walker/crutches.

Tub/shower

You cannot get down into a tub until you are mobile enough to do so safely and cleared by the doctor. You can sit on a bench/chair or stand in a tub or shower. Be sure the tub bench/chair is high enough for your height. Assure all needed items are within reach prior to your shower. Use a rubber mat or nonskid adhesive on the floor of the tub or shower. You can make a plastic "skirt" for your knee out of a garbage bag with the bottom cut out. Tie the bag's pull string snugly around your thigh above your bandage. The lower end should extend below your dressing. You may take a shower with the plastic "skirt" over the knee. It does not matter if your feet get wet. Do not take a shower with your entire leg and foot in a large trash bag as you may slip and fall. Do not shower without a protective "skirt" until your staples/sutures are removed, unless approved by your surgeon. The instructions below can also be followed for a shower stall.

Getting into the tub using a tub bench

1. Place the tub bench in the tub. It should face the faucets with the handle bar on the inside of the tub.
2. Back up until you can feel the tub bench on the back of your legs. Be sure you are centered against the tub bench.
3. Keep one hand on the grab bar or in the middle of the walker/crutch/cane while reaching back for the tub bench with the other hand.
4. Slowly lower yourself onto the tub bench without leaning forward.
5. Move the walker out of your way. Keep it close by.
6. Lift your legs, one at a time, over the edge of the tub as you scoot yourself around.
7. Scoot yourself to the center of the bench.

Getting out of the tub using a tub bench

1. Scoot yourself around as you lift your legs, one at a time, over the edge of the tub.
2. Scoot yourself to the edge of the tub bench.
3. Place one hand on the grab bar or in the middle of the walker/crutch/cane. Push up with the other hand on the back of the tub bench.
4. Gain your balance and place your hands on the walker/crutches.

9. Vehicles

Getting into the vehicle

Generally, driving resumes 4 to 6 weeks after surgery. You can ride in a car after surgery by following the techniques and precautions outlined by your therapist. Please discuss driving with your surgeon.

1. Push the seat all the way back. Recline the back of the seat as far as it will go or at least halfway.
2. Place a plastic trash bag on the seat to help you turn frontward more easily.
3. Back up to the vehicle until you feel it touch the back of your legs.
4. Reach for the back of the seat/doorframe with one hand and the dashboard with the other hand. Don't hold onto door. Lower yourself down onto the seat. Be sure to lower your head to avoid hitting it on the doorframe. Scoot backward as far as you can toward the other seat or upward onto the reclined back part of seat.
5. Turn frontward, leaning back as you lift one leg at a time onto the floorboard of the vehicle.
6. Center yourself on the seat.
7. Bring the seat back to a comfortable position.
8. Put on your seatbelt.

Getting out of the vehicle

1. Push the seat all the way back. Recline the back of the seat as far as it will go or at least halfway.
2. Scoot yourself sideways and backward as you lift one leg at a time out of the vehicle and onto the ground. Lean back as you do so.
3. Push yourself up with one hand on the dashboard and the other on the back of the seat/doorframe. Be sure to lower your head to avoid hitting it on the doorframe.
4. Gain your balance and place your hands on the walker/crutches/cane.



10. Energy conservation and joint protection

Activities

Choose low-impact activities such as:

- Regular walks in or outdoors
- Walking on treadmill
- Recommended exercise at a fitness center
- Swimming
- Bicycling
- Dancing
- Golfing
- Cross country skiing
- Joints in Motion class (sponsored by a local chapter of the Arthritis Foundation)
- Walk with Ease program (sponsored by a local chapter of the Arthritis Foundation)

Avoid high-impact activities such as:

- Downhill or water skiing
- Jogging or running
- High-impact aerobics
- Jumping activities
- Tennis or racquetball
- Football
- Baseball
- Lifting > 25 lbs. repeatedly

Household tips

- Maintain clear walkways.
- Do not get down on your knees to scrub floors. Use a mop or long-handled brush.
- Keep often-used cooking or working supplies where they can be easily reached.
- Plan ahead by gathering all cooking or working supplies at one time to work on a project.
- Use a high stool or use cushions to provide a better working height.
- Plan rest periods between periods of activity.
- Pace yourself; attempting to do too much at one time can leave you exhausted for the rest of the day.
- Note your highest energy time of day to tackle a heavier activity.
- Break down a heavy activity into smaller, more manageable ones.
- Push or pull items instead of carrying them.
- Ask for help when you need it.
- Learn to work smarter, not harder.

NOTE: Many other tips for joint protection, work simplification, energy conservation and equipment are available from an occupational therapist or the Arthritis Foundation. Check your local phone listings for an Arthritis Foundation chapter near you or go to <http://www.arthritis.org/>.

11. Appendix A

Healthcare provider phone numbers

Healthcare provider	Name	Phone number
Surgeon		
Primary care provider		
Home health agency		
Pharmacy		
Care Now		Charlotte: 704-384-CARE (2273) Winston-Salem & Thomasville: 336-718-7070 Rowan area, toll-free: 1-800-335-4921 Brunswick area: 910-721-CARE (2273)

Other phone numbers

Name	Phone number	Comment

Appendix B

Appointment list

Appointment	Date	Time	Reason for appointment

Notes
